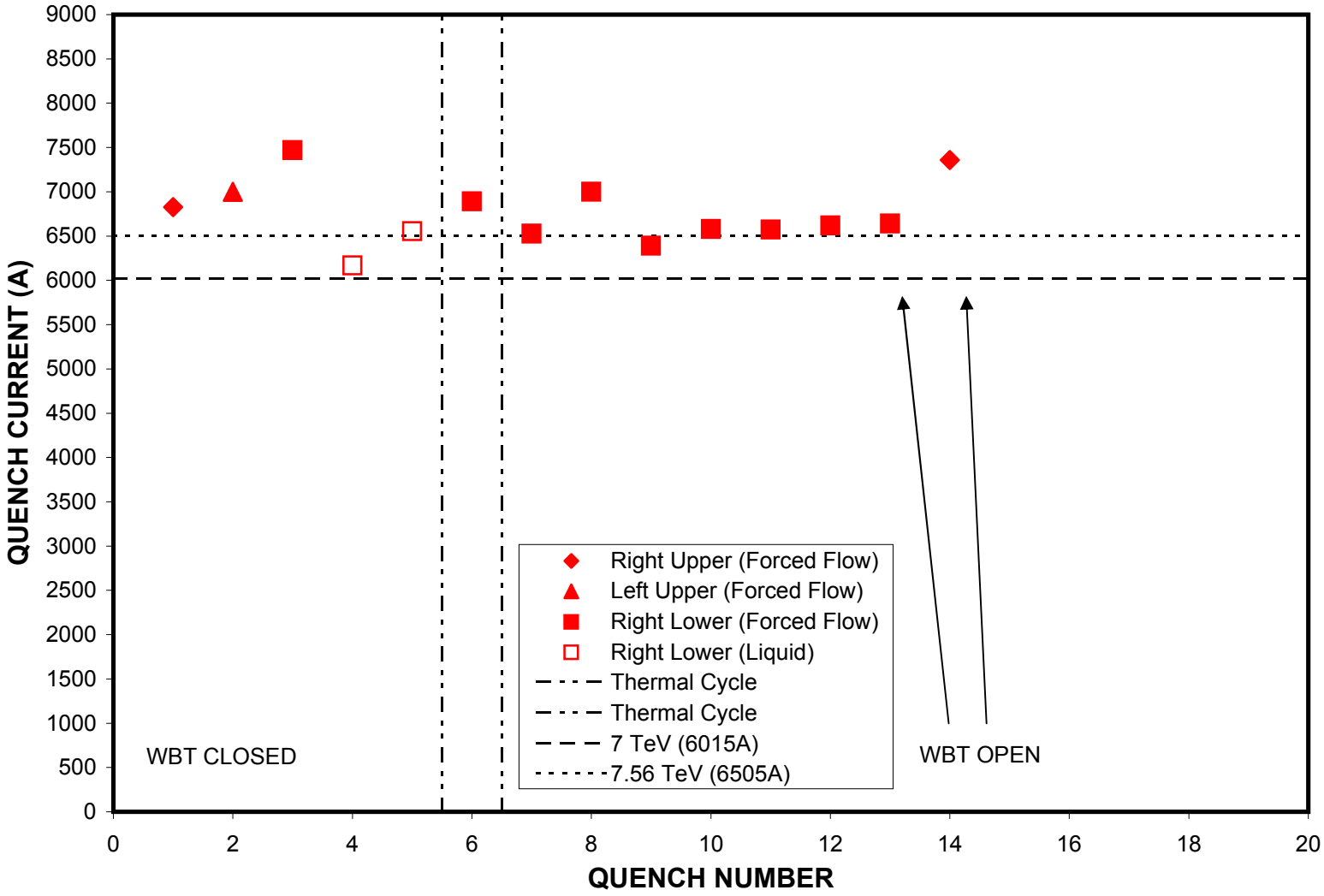
D2L104 QUENCH TESTS



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D2L104 QUENCH SUMMARY

Magcool Bay C

QUENCH #	RUN #	CURRENT (A)	T1 (K)	T3 (K)	START (ms)	MIITS	COIL	COMMENTS
T = 4.5K (nom)								
Warm bore tubes installed, sealed, and under vacuum								
Forced flow cooling @ 12atm								
1	26	6827	4.822	5.226	-29	9.5	upper right	
2	27	7001	4.839	5.267	-20	9.3	upper left	h
3	28	7469	4.847	5.231	-18	12.1(i)	lower right	
Liquid helium bath cooling @ 1.4atm								
4	29	6169	4.681	4.665	-28	8.9	lower right	j
5	30	6553	4.710	4.696	-30	8.6	lower right	k
Thermal Cycle (warmup to clear blockage in leads)								
T = 4.5K (nom)								
Warm bore tubes installed, sealed, and under vacuum								
Forced flow cooling @ 12atm								
6	32	6890	4.753	5.220	-25	9.7	lower right	
Thermal Cycle (cryo shutdown for maintenance)								
T = 4.5K (nom)								
Warm bore tubes installed, sealed, and under vacuum								
Forced flow cooling @ 12atm								
7	39	6528	4.732	5.191	-34	9.7	lower right	
8	40	6999	4.713	5.144	-30	10.0	lower right	
9	41	6391	4.709	5.145	-38	9.7	lower right	
10	42	6579	4.714	5.166	-34	9.8	lower right	
11	43	6573	4.689	5.139	-32	9.7	lower right	
12	44	6619	4.696	5.133	-33	10.1	lower right	
Warm Bore tubes open								
13	45	6642	4.737	5.149	-33	9.8	lower right	

14	46	7359	4.726	5.119	-12(l)	9.3	upper right

Notes:

a) Ramp rate for quenches was 20A/s.
b) Energy extraction used: 35mohms for all quenches.
c) The temperature T1 is a diode sensor located in the helium return line tube which contains the superconducting bus; T3 is in the lower lead interconnect pot. Both have associated redundant sensors.
d) There were no auxiliary voltage taps in the magnet coils.
e) Data acquisition sampling rate was 1kHz for all quenches.
f) Strip heaters were fired at 475V (nom) and 96A (nom), with 1ms delay.
g) Voltage spikes were seen on the voltage difference signals for all quenches. For quenches #2 and #11, a spike occurred right before the quench start.
h) For Quench #2, the lower left coil also quenched, at -19ms.
i) For Quench #3, the strip heaters did not fire, resulting in higher miits generated.
j) For Quench #4, the upper left coil also quenched, at +58ms (approx).
k) For Quench #5, the upper left coil also quenched, at +53ms (approx), and the upper right at +56ms (approx).
l) Starting with Quench #14 (Run #46), the voltage difference quench detector threshold voltage was decreased from 1.6V to 0.6V to lower miits generation.